

DIAGNOSES OF PHYLLOSTEGIA SPECIES (LABIATAE)

HAWAIIAN PLANT STUDIES 140

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The author has been doing research on Phyllostegia for a long time and has produced a lengthy manuscript. In order to make the new taxa available, their diagnoses are herein printed. Unless otherwise located, the types are in the Bishop Museum, Honolulu.

P. adenophora sp. nov.

Ramulis puberulis, petiolis 2-5 cm longis puberulis, racema terminali, nodis 6-floriferis, calycibus 5.5 mm longis glandulose puberulis, tubo corollae 11 mm longo pilosulo, labia infera 8.5-9 mm longa. Typus: Kauai I., J. F. Rock 17,313.

P. alba sp. nov.

Ramulis puberulis, petiolis 2-3.5 cm longis puberulis, laminis 6-9 cm longis ellipticis infra pilosulis, racema terminali, nodis 6-floriferis, calycibus 8-9.5 mm longis puberulis, tubo corollae 22-23 mm longo puberulo, loba infera 11-12 mm longa. Typus: Maui I., C. N. Forbes 363.M.

P. arenicola sp. nov.

Ramulis pilosis, petiolis 4-14 mm longis pilosulis, laminis 2-5.3 cm longis ovatis infra pilosulis, racema terminali, nodis 4-floriferis, calycibus 5 mm longis hirsutulis, lobis corollae 9 mm longis hirsutulis, labia infera 6 mm longa. Typus: Midway Atoll, E. E. Caum 25.

P. atomifera sp. nov.

Ramulis glandulose atomiferis, petiolis 10-23 mm longis glandulosis, laminis 3-6.3 cm longis ovatis infra glandulose atomiferis, racema terminali, calycibus 4.5-5 mm longis puberulis et glandulosis, labia infera 2 mm longa. Typus: Oahu I., B. H. Gagne.

P. axillaris sp. nov. Ramulis pilosulis, petiolis 2-4 cm longis pilosulis, laminis 6.5-17.5 cm longis ellipticis infra subglabris, racema terminali, nodis 2-floriferis, calycibus 5 mm longis glandulose pilosulis, tubo corollae 6 mm longo resinifero, labia infera 4 mm longa. Typus: Hawaii I., S. Anderson 488.

P. brevicalycis sp. nov.

Ramulis puberulis, petiolis 6-21 mm longis puberulis, laminis 3.5 cm longis ellipticis, infra in nervis pilosulis, racema terminali, nodis 8-floriferis, calycibus 4-5 mm longis puberulis, tubo corollae 7.5 mm longo, labia infera 3 mm longa. Typus: Maui I., C. N. Forbes 2,446.M.

P. brevilobata sp. nov.

Ramulis pilosulis, petiolis 1.8-3.7 cm longis puberulis, laminis 6.5-9.5 cm longis ovatis infra puberulis, racema terminali, nodis 8-10-floriferis, calycibus 3-4 mm longis puberulis, tubo corollae 10 mm longo, labia infera 6 mm longa. Typus: Maui I., C. N. Forbes 502.M.

P. brevis sp. nov.

Ramulis pilosulis, petiolis 5-55 mm longis pilosulis, laminis 2-10 cm longis ovatis infra puberulis, racema terminali, nodis 8-floriferis, calycibus 3.5-4 mm longis puberulis, tubo corollae 8 mm longo pilosulo, loba infera 6 mm longa. Typus: Maui I., Wawra 1,915 (W).

P. Brighamii sp. nov.

Ramulis puberulis, petiolis 20-23 mm longis puberulis, laminis 3.7-5 cm longis ovatis infra in nervis puberulis, racema terminali, nodis 8-10-floriferis, calycibus 3-4 mm longis atomiferis, tubo corollae 8 mm longo puberulo, labia infera 2.5 mm longa. Typus: Maui I., W. T. Brigham 405 (GH).

P. Bryanii (Sherff) comb. nov.

P. racemosa Benth., var. *Bryanii* Sherff, Am. Journ. Bot. 21: 699, 1934.

P. capitata sp. nov.

Ramulis glandulose pilosulis, petiolis 1.5-4 cm longis pilosulis, laminis 8-11 cm longis lanceolatis infra hirsutulis, racema terminali, calycibus 6.5-7 mm longis glandulose pilosulis, tubo corollae 12 mm longo, labia infera 7 mm longa. Typus: Kauai I., J. H. R. Plews 80;

P. catenulata sp. nov.

Ramulis catenulate hirsutulis, petiolis 27-36 mm longis catenulate hirsutis, laminis 9.5-11 cm longis ovatis pilosis racema terminali, calycibus 7 mm longis hirsutis, tubo corollae 10 mm longo hirsuto, labia infera 6 mm longa. Typus: Hawaii I., J. F. Rock 3,439.

P. cernua sp. nov.

Ramulis pilosulis, petiolis 1.5-4.5 cm longis pilosulis, laminis 6.5-11 cm longis ovatis infra hirsutulis, racema terminali, calycibus 4 mm longis pilosulis, tubo corollae 9-10 mm longo pilosulo, labia infera 7-8 mm longa. Typus: Hawaii I., L. W. Cuddihy 770.

P. chartacea sp. nov.

Ramulis puberulis, petiolis 1-4 cm longis puberulis, laminis 5-10 cm longis lanceolatis infra puberulis, racema terminali, nodis 4-floriferis, calycibus 10-11 mm longis puberulis, loba infera 17-18 mm longa. Typus: Maui I., J. F. Rock.

P. cordata sp. nov.

Ramulis pilosis, petiolis 2-3 cm longis pilosis, laminis 4-5.8 cm longis ovatis infra in nervis pil-

osulis, racema terminali, calycibus 5-5.5 mm longis pilosulis. Typus: Kauai, Kokee, collector unknown.

P. Cowanii sp. nov.

Ramulis pilosis, petiolis 25-55 mm longis pilosis, laminis 7-11 cm longis ovati-lanceolatis infra in nervis puberulis, racema terminali, nodis 4-floriferis, calycibus 5 mm longis puberulis, corollis hirsutulis. Typus: Oahu, R. S. Cowan 808.

P. curta sp. nov.

Ramulis pilosulis, petiolis 3.5-7.5 cm longis pilosulis, laminis 11-14 cm longis ellipticis infra puberulis, racemis axillaribus, nodis 6-floriferis, calycibus 4-4.5 mm longis pilosulis, tubo corollae 8 mm longo, labia infera 6 mm longa. Typus: Hawaii I., Macrae (GH).

P. decemiflorifer sp. nov.

Ramulis pilosulis, petiolis 17-28 mm longis pilosulis, laminis 8-10.5 cm longis lanceolatis infra pilosulis, racema terminali, calycibus 6 mm longis pilosulis. Typus: Hawaii I., F. R. Warshauer 1,649.

P. decumbens sp. nov.

Ramulis pilosulis, petiolis 8-17 mm longis pilosis, laminis 3-4 cm longis lanceolatis infra pilosis, racema terminali, nodis 14-20-floriferis, calycibus 8-10 mm longis pilosulis, tubo corollae 8 mm longo puberulo, loba infera 8 mm longa. Typus: Hawaii I., C. N. Forbes 183.H in part.

P. deltoidea sp. nov.

Ramulis pilosulis, petiolis 2-6 cm longis pilosulis, laminis 7-14.5 cm longis ovatis infra pilosulis, racema terminali, nodis 6-floriferis, calycibus 3.5 mm longis pilosulis, tubo corollae 10 mm longo, labia infera 5.5 mm longa. Typus: Molokai I., J. F. Rock 6,127.

P. elliptica sp. nov.

Ramulis puberulis, petiolis 7-15 mm longis ciliatis, laminis 3-6.5 cm longis ellipticis infra midnervo puberulo, racema terminali, nodis 6-floriferis, calycibus 8-11 mm longis puberulis, tubo corollae 13 mm longo pilosulo, loba infera 13 mm longa. Typus: Maui I., B. Harrison 257.

P. Fagerlindii (Sherff) comb. nov.

P. mollis Benth., var. Fagerlindii Sherff, Occas.

Papers, B. P. Bishop Mus., 20: 13, fig. 5, 1949.

P. Fayi sp. nov.

Ramulis glandulose puberulis, petiolis 1.3-4 cm longis puberulis, laminis 5-12.5 cm longis lanceolatis infra in nervis puberulis, racema terminali, nodis 6-floriferis, calycibus 6.5-7 mm longis glandulose puberulis, tubo corollae 11-12 mm longo pilosulo, labia infera 6.5-7 mm longa. Typus: Kauai I., J. Fay 555.

P. foliosa sp. nov.

Ramulis hirsutis, petiolis 2.2-2.5 cm longis, laminis 5-6 cm longis ovatis infra hirsutis, nodis 10-floriferis, calycibus 8-9 mm longis hirsutulis, tubo corollae 11-12 mm longo hirsutulo, labia infera 13-14 mm longa. Typus: Hawaii I., J. F. Rock 4,314.

P. glabriuscula (A. Gray) comb. nov.

P. parviflora (Gaud.) Benth., var. *glabriuscula*

A. Gray, Proc. Am. Acad. Arts 5: 344, 1862, in part.

P. glandulosa sp. nov.

Ramulis pilosis, petiolis 2.5-4 cm longis pilosis, laminis 6-10 cm longis lanceolatis infra in nervis pilosis, nodis 10-floriferis, calycibus 4-5 mm longis pilosulis, tubo corollae 7-8 mm longo pilosulo, loba infera 5 mm longa. Typus: Hawaii I., Kona, J. F. Rock.

P. grandiflora (Gaud.) Benth., var. *majoricalycis* var. nov.

Pedicellis 8-11 mm longis, calycibus 10-13 mm longis puberulis. Typus: Woahoo [=Oahu I.] Macrae (GH).

P. heterodoxa (Sherff) comb. nov.

P. brevidens A. Gray, var. *heterodoxa* Sherff, Am. Journ. Bot. 21: 700, 1934.

P. hiati sp. nov.

Ramulis hirsutis, petiolis 1-2.5 cm longis hirsutis, laminis 4.5-7.5 cm longis ovatis infra pilosis, nodis 8-10-floriferis, calycibus 5.5 mm longis hirsutis, corollis hirsutulis. Typus: Maui I., R. Hobdy 762,

P. Hitchcockii (Sherff) comb. nov.

P. stachyoides A. Gray, var. *Hitchcockii* Sherff, Am. Journ. Bot. 21: 700, 1934.

P. Hobdyi sp. nov.

Ramulis catenulate pilosis, petiolis 2.5-4 cm longis pilosis, laminis 8.5-12.5 cm longis cordatis infra pilosis, nodis 6-floriferis, calycibus 6.5-7 mm longis pilosulis, tubo corollae 11-12 mm longo, labia infera 11-12 mm longa. Typus: Kauai I., R. W. Hobdy 109.

P. hualalaiensis sp. nov.

Ramulis pilosulis, petiolis 2-4 cm longis ciliatis, laminis 6-11 cm longis ovatis infra puberulis, nodis 18-22-floriferis, calycibus 5-6 mm longis pilosulis, tubo corollae 7 mm longo pilosulo, labia infera 7 mm longa. Typus: Hawaii I., H. St. John 11,355.

P. imminuta (Sherff) comb. nov.

P. Helleri Sherff, var. *imminuta* Sherff, Am. Journ. Bot. 21: 699, 1934.

P. insignis sp. nov.

Ramulis puberulis, petiolis 17-19 mm longis puberulis, laminis 5.5-7.5 cm longis ovatis, infra puberulis, nodis 6-floriferis, calycibus 8-9 mm longis puberulis, tubo corollae 13-17 mm longo pilosulo, labia infera 15-18 mm longa. Typus: Maui I., A. Medeiros.

P. interrupta sp. nov.

Nodis 8-floriferis, calycibus 4 mm longis pilosulis, nucibus siccis 3-3.5 mm longis. Typus: Iles Sandwich [=Hawaiian Is.], Voy. Uranie, C. Gaudichaud (P).

P. kaalaensis sp. nov.

Plantis glabris, petiolis 2-6 cm longis, laminis 5-13 cm longis ovatis, nodis 6-floriferis, calycibus 5 mm longis glabris, tubo corollae 11 mm longo glabro, labia infera 7 mm longa. Typus: Oahu I., J. Obata 77-315.

P. kahiliensis sp. nov.

Ramulis pilosis, petiolis 2.5-5.5 cm longis puberulis, laminis 8.5-9.5 cm longis ovatis infra pilosis, nodis 6-floriferis, calycibus 4.5-5 mm longis hirsutulis, tubo corollae 8-9 mm longo pilosulo, labia infera 7 mm longa. Typus: Kauai I., J. J. Fay 156.

P. kamokuensis sp. nov.

Ramulis puberulis, petiolis 7-16 mm longis puberulis, laminis 3-6 cm longis ovatis infra in nervis puberulis, nodis 6-floriferis, calycibus 3-3.5 mm longis puberulis, tubo corollae 7-8 mm longo pilosulo, labia infera 3 mm longa. Typus: Molokai I., J. F. Rock 6,119.

P. kauaiensis sp. nov.

Ramulis pilosulis, petiolis 10-18 mm longis pilosulis, laminis 3-5.3 cm longis ovatis cordatis infra in nervis pilosulis, nodis 6-floriferis, calycibus 4 mm longis pilosulis, tubo corollae 8.3 mm longo pilosulo, labia infera 3.5 mm longa. Typus: Kauai, H. Wawra (W).

P. kauensis sp. nov.

Ramulis pilosulis, petiolis 2.5-3 cm longis pilosis, laminis 7-10 cm longis ovatis infra pilosis, nodis 10-12-floriferis, calycibus 5.5-6 mm longis pilosulis, tubo corollae 14 mm longo pilosulo, loba infera 10 mm longa. Typus: Kauai I., Jacobi 722.

P. kilaueaensis sp. nov.

Ramulis pilosis, petiolis 1.5-3 cm longis pilosis, laminis 6-9.8 cm longis ovatis infra pilosis, nodis 6-8-floriferis, calycibus 7 mm longis pilosis, tubo corollae 11-12 mm longo piloso, labia infera 8.5 mm longa. Typus: Hawaii I., Kilauea For. Res., F. R. Warshauer & R. L. Stemmermann.

P. kohalaensis sp. nov.

Ramulis hirsutis, petiolis 2-3.2 cm longis, laminis 4.5-8 cm longis ovatis infra hirsutulis, nodis 10-14-floriferis, calycibus 7 mm longis hirsutis, tubo corollae 12 mm longo hirsutulo, loba infera 12 mm longa. Typus: Hawaii I., J. F. Rock 8,377.

P. konaensis sp. nov.

Ramulis pilosulis, petiolis 2.5-4 cm longis pilosulis, laminis 7-10 cm longis infra puberulis, nodis 12-14-floriferis, calycibus 8-9 mm longis pilosulis, tubo corollae 10 mm longo, loba infera

8 mm longa. Typus: Hawaii I., C. N. Forbes 183a.H.

P. lanaiensis (Sherff) comb. nov.

P. glabra (Gaud.) Benth., var. lanaiensis Sherff,
Bot. Gaz. 96: 136, 1934.

P. lantanoides Sherff, var. konahuanuiana var. nov.

Petiolis pilosulis, laminis infra in nervis pilosis,
calycibus 3.5-4 mm longis. Typus: Oahu I., H. St. John
11,506.

P. laxior (Deg. & Sherff in Deg.) comb. nov.

P. hirsuta Benth., var. laxior Deg. & Sherff in
Deg., Fl. Haw. 316: 10/12/34.

P. LeBishopii sp. nov.

Ramulis puberulis, petiolis 15-25 mm longis puberulis, laminis 8-12.5 cm longis infra puberulis, nodis 5-floriferis, calycibus 8-10 mm longis puberulis, tubo corollae 12-13 mm longo, labia infera 10 mm longa. Typus: Maui I., L. E. Bishop 0471113.

P. lehuaensis sp. nov.

Ramulis pilosulis, petiolis 3-4.7 cm longis pilosulis, laminis 6-11 cm longis lanceolatis infra pilosulis, nodis 4-6-floriferis, calycibus 5 mm longis, tubo corollae 10 mm longo puberulo, labia infera 4.2 mm longa. Typus: Hawaii I., Pulehua, J. F. Rock.

P. leukantha sp. nov.

Ramulis puberulis, petiolis 12-16 mm longis glabris, laminis 4-7 cm longis ellipticis infra in nervis puberulis, nodis 6-floriferis, calycibus 10-11 mm longis puberulis, tubo corollae 17-18 mm longo, labia infera 15-17 mm longa. Typus: Maui I., Hanaula, R. Hobdy 802.

P. longitubata sp. nov.

Ramulis villosis, petiolis 1.5-5 cm longis villosis, laminis 7-9 cm longis ellipticis infra villosis, nodis 6-floriferis, calycibus 8-10 mm longis villosis, tubo corollae 15 mm longo, labia infera 21 mm longa. Typus: Molokai I., R. Hobdy 802.

P. Lydgatei (Sherff) comb. nov.

P. mollis Benth., var. Lydgatei Sherff, Am. Journ.
Bot. 21: 43, fig. 11, 1935.

P. makawaoensis sp. nov.

Ramulis pilosis, petiolis 1.5-6 cm longis pilosulis, laminis 7-15 cm longis ellipticis infra puberulis, nodis 6-floriferis, calycibus 2.5 mm longis 20-nervosis, lobis 0.3 mm longis ovatis, Typus: Maui I., W. Hillebrand & J. M. Lydgate.

P. manoana sp. nov.

Ramulis hirsutis, petiolis 3.7-6.7 cm longis, hirsutis, laminis 13.5-15 cm longis ovatis infra hirsutulis, nodis 6-floriferis, calycibus 3-3.8 mm longis glandulose puberulis, tubo corollae 10-11 mm longo, loba infera 10-12 mm longa. Typus: Oahu I., C. N. Forbes 1,306.O.

P. micrantha sp. nov.

Ramulis puberulis, petiolis 3.2-3.4 cm longis puberulis, laminis 6-10 cm longis ellipticis hirsutulis, nodis 6-8-floriferis, calycibus 2.5-2.7 mm longis puberulis, tubo corollae 7.5 mm longo, loba infera 4.5 mm longa. Typus: Oahu I., C. N. Forbes 1,589.0.

P. molokaiensis sp. nov.

Ramulis puberulis, petiolis 1-6 cm longis puberulis, laminis 4-10.5 cm longis ellipticis infra puberulis, nodis 8-6-floriferis, calycibus 5.2 mm longis puberulis, tubo corollae 9 mm longo puberulo, labia infera 5.5 mm longa. Typus: Molokai I., O. Degener 22,202 (W).

P. moniliformis sp. nov.

Ramulis hirsutis, petiolis 25-27 mm longis hirsutis, laminis 5.5-10.3 cm longis ovatis vel ellipticis infra hirsutulis, nodis 16-18-floriferis, calycibus 6-6.5 mm longis hirsutulis, tubo corollae 12-13 mm longo hirsutulo, loba infera 8.5 mm longa. Typus: Hawaii I., J. D. Jacobi 722.

P. montana sp. nov.

Ramulis pilosulis, petiolis 8-34 mm longis pilosulis, laminis 1.4-9 cm longis ovatis infra in nervis puberulis, nodis 6-floriferis, calycibus 5-5.5 mm longis pilosulis. Typus: Molokai I., F. R. Warshauer 2,408.

P. multiflora sp. nov.

Ramulis hirsutis, petiolis 3-4.2 cm longis hirsutis, laminis 6.5-11 cm longis ovatis infra hirsutulis, nodis 10-12-floriferis, calycibus 14-16 mm longis hirsutis, tubo corollae 17 mm longis, labia infera 20 mm longa. Typus: Hawaii I., J. F. Rock 8,312.

P. oahuensis sp. nov.

Ramulis puberulis, petiolis 6-11 mm longis ciliatis, laminis 15-25 mm longis lanceolatis infra atomiferis, nodis 6-floriferis, calycibus 4.5 mm longis puberulis, tubo corollae 6-7 mm longo pilosulo, loba infera 4 mm longa. Typus: Oahu I., B. H. Gagne.

P. Obatae sp. nov.

Ramulis puberulis, petiolis 2.5-9 cm longis puberulis, laminis 8-18 cm longis lanceolatis varie ovatis infra in nervis puberulis, nodis 6-floriferis, calycibus 3 mm longis puberulis, tubo corollae 9 mm longo, labia infera 6-6.5 mm longa. Typus: Oahu I., J. Obata 354.

P. occidentalis sp. nov.

Ramulis puberulis, petiolis 2.5-5.4 cm longis puberulis, laminis 7.5-11 cm longis ovatis infra in nervis puberulis, nodis 6-10-floriferis, calycibus 7 mm longis puberulis, tubo corollae 7 mm longo, labia infera 4 mm longa. Typus: Maui I., H. St. John 25,696.

P. odorata sp. nov.

Ramulis puberulis, petiolis 13-45 mm longis glabris, laminis 6-9 cm longis ellipticis infra in nervis puberulis, nodis 6-floriferis, calycibus 6-7 mm longis puberulis, tubo corollae 25 mm longo puberulo, labia infera 18 mm longa. Typus: Maui I., R. Hobdy 775.

P. olokeleensis sp. nov.

Ramulis pilosulis, petiolis 1-2.3 cm longis pilosulis, laminis 4-8 cm longis ovatis infra pilosulis, nodis 6-floriferis, calycibus 5.5 mm longis pilosulis, tubo corollae 9-10 mm longo pilosulo, loba infera 7 mm longa. Typus: Kauai, J. M. Lydgate 15.

P. olokuiensis sp. nov.

Ramulis puberulis, petiolis 2-5.5 cm longis puberulis, laminis 6-11 cm longis ellipticis infra in nervis puberulis, nodis 8-floriferis, calycibus 5 mm longis puberulis, tubo corollae 7 mm longo. Typus: Molokai I., H. St. John 23,246.

P. orientalis sp. nov.

Ramulis pilosulis, petiolis 3.5-6 cm longis pilosulis, laminis 10-13 cm longis ovatis infra pilosulis, nodis 10-18-floriferis, calycibus 9 mm longis pilosulis, tubo corollae 11-13 mm longo, labia infera 16 mm longa. Typus: F. R. Warshauer 2,535.

P. ovata sp. nov.

Ramulis subhirsutulis, petiolis 2-3.7 cm longis, laminis 7-12 cm longis ellipticis infra pilosulis, nodis 10-8-floriferis, calycibus 6-7 mm longis pilosulis, tubo corollae 6-7 mm longo pilosulo, labia infera 7 mm longa. Typus: Hawaii I., G. Clarke 3.

P. phytolaccoides (Sherff) comb. nov.

P. macrophylla (Gaud.) Benth., var. phytolaccoides Sherff, Bot. Gaz. 96: 137, 1934.

P. phytolaccoides (Sherff) St. John, var. *salebrosa* var. nov.

Laminis adpresse pilosulis infra nervis principalibus salebrose pilosulis. Typus: Maui I., F. R. Warshauer 2,876.

P. pilosa sp. nov.

Ramulis pilosis, petiolis 5-20 mm longis pilosulis, laminis 2.8-5.5 cm longis ovatis infra in nervis pilosulis, tubo corollae 7 mm longo puberulo, labia infera 4 mm longa. Typus: Maui I., Ukulele, J. F. Rock.

P. pilosicincta sp. nov.

Ramulis pilosis, petiolis 2.3-5 cm longis pilosis, laminis 7.5-11 cm longis ovatis infra in nervis pilosulis, nodis 8-10-floriferis, calycibus 4-6 mm longis pilosis. Typus: Maui I., E. Smith.

P. pilosula sp. nov.

Ramulis pilosulis, petiolis 2-3.8 cm longis pilosulis, laminis 6.5-7.5 cm longis ellipticis infra in nervis pilosulis, nodis 8-floriferis, calycibus 5.5 mm longis. Typus: Molokai I., F. R. Warshauer 2,438.

P. pluriflora sp. nov.

Ramulis glabris, petiolis 3.5-5 cm longis ciliatis, laminis 5.5-9.6 cm longis ellipticis infra glabris, nodis 8-10-floriferis, calycibus 7-7.5 mm longis puberulis. Typus: Hawaii I., I. M. Tomich 4,005.

P. plurinodosa sp. nov.

Ramulis pilosulis, petiolis 1-3.3 cm longis hirsutulis, laminis 6-10 cm longis ovatis infra hirsutulis, nodis 8-10-floriferis, calycibus 5-5.5 mm longis hirsutulis, tubo corollae 9 mm longo pilosulo, labia infera 8 mm longa. Typus: Hawaii I., F. R. Warshauer 2,495.

P. polyantha sp. nov.

Ramulis puberulis, petiolis 1-2 cm longis ciliatis, laminis 5-8 cm longis ellipticis infra pilosulis, nodis 18-20-floriferis, calycibus 6-7.5 mm longis puberulis, tubo corollae 7.5-8 mm longo puberulo, labia infera 10 mm longa. Typus: Hawaii I., G. Clarke 574.

P. pubens sp. nov.

Ramulis villosis, petiolis 1-2.5 cm longis villosis, laminis 6-9.5 cm longis ovati-lanceolatis infra pilosis, nodis 10-12-floriferis, calycibus 7-8 mm longis villosis, tubo corollae 12.1 mm longo pilosulo, labia infera 8 mm longa. Typus: Hawaii I., F. R. Warshauer 2,477.

P. reflexa sp. nov.

Ramulis pilosulis, petiolis 18-45 mm longis pilosulis, laminis 5.5-9 cm longis ovatis infra in nervis pilosulis, nodis 10-14-floriferis, calycibus 4-4.5 mm longis pilosulis, corollis 12-14 mm longis pilosulis. Typus: Hawaii I., J. Davis 598.

P. Remyi (Sherff) comb. nov.

P. macrophylla (Gaud.) Benth., var. *Remyi* Sherff, Bot. Gaz. 96: 136, 1934.

P. repanda sp. nov.

Ramulis pilosulis, petiolis 12-25 mm longis pilosulis, laminis 4-5.8 cm longis ovatis infra pilosulis, nodis 8-floriferis, calycibus 7 mm longis pilosulis. Typus: Hawaii I., L. Stemmermann 3,976.

P. retrorsa sp. nov.

Ramulis pilosulis, petiolis 12-28 mm longis, pilosulis, laminis 3.5-9 cm longis lancei-ellipticis infra in nervis puberulis, nodis 26-floriferis, calycibus 4 mm longis pilosulis, tubo corollae 9-12 mm longo, labia infera 9 mm longa. Typus: Hawaii I., Hilo Forest, J. F. Rock.

P. rhuakos sp. nov.

Ramulis pilosulis, petiolis 6-18 mm longis pilosulis, laminis 3-3.8 cm longis ellipticis infra pilosulis, nodis 6-10-floriferis, calycibus 5-5.5 mm longis pilosulis, tubo corollae 6-7 mm longo pilosulo, labia infera 4 mm longa. Typus: Hawaii I., C. N. Forbes 983.H.

P. rubescens sp. nov.

Ramulis pilosulis, petiolis 2-9 cm longis pilosulis, laminis 7-15.5 cm longis pilosulis, nodis 6-floriferis, calycibus 5 mm longis puberulis, tubo corollae 9-10 mm longo pilosulo, labia infera 8-9 mm longa. Typus: Hawaii I., J. Davis 685.

P. rubritincta sp. nov.

Herbis glabris, petiolis 2-4 cm longis, laminis 3.3-9 cm longis lanceolatis, nodis 6-floriferis, pedunculis 2-3.5 mm longis, calycibus 5-5.5 mm longis glabris, tubo corollae 11-13 mm longo glabro, labia infera 5-6 mm longa. Typus: Lanai I., 3/10/15, G. C. Munro.

P. secunda sp. nov.

Ramulis pilosis, petiolis 3.3-8.6 cm longis pilosis, laminis 9-13 cm longis ovatis infra pilosis, nodis 14-26-floriferis, calycibus 3-3.5 mm longis glandulose hirsutulis, tubo corollae 12 mm longo piloso, labia infera 5.2 mm longa. Typus: Kauai I., Kaholuamano, J. F. Rock.

P. serrata sp. nov.

Ramulis hispidis, petiolis 2-4 cm longis hispidis, laminis 11-15.5 cm longis ovatis infra hirsutulis, nodis 10-floriferis, calycibus 15 mm longis hirsutis, tubo corollae 10 mm longo hirsutulo, labia infera 8 mm longa. Typus: Hawaii I., F. R. Warshauer 2,490.

P. sexiflora sp. nov.

Ramis hirsutis, petiolis 4.5-6.2 cm longis hirsutis, laminis 13-17 cm longis ellipticis infra hirsutulis, nodis 6-floriferis, calycibus 19-20 mm longis hirsutis, lobis superioribus 8-10 mm longis lanceolatis serratis. Typus: Hawaii I., F. R. Warshauer 1,405.

P. suaveolens sp. nov.

Ramulis glabris, petiolis 15-20 mm longis ciliatis, laminis 5.8-9.2 cm longis ellipticis glabris, nodis 12-18-floriferis, calycibus 4-5 mm longis puberulis, tubo corollae 9 mm longo puberulo, labia infera 7 mm longaa. Typus: Hawaii I., J. Davis 276.

P. Swezeyi sp. nov.

Ramulis velutinis, petiolis 2.5-5.4 cm longis velutinis, laminis 6-10 cm longis ovatis supra pilosulis, nodis 4-6-floriferis, calycibus 2.8-3.5 mm longis puberulis, tubo corollae 8-10 mm longo pilosulo, labia infera 7 mm longa. Typus: Oahu I., O. Swezey.

P. ternaria sp. nov.

Ramulis hirsutis, petiolis 12-62 mm longis hirsutis, laminis 5.5-12.3 cm longis ovatis infra hirsutis, nodis 8-14-floriferis, calycibus 4-4.3 mm longis hirsutis, tubo corollae 9 mm longo pilosulo, loba infera 6 mm longa. Typus: Oahu I., J. Obata 441.

P. tongaensis sp. nov.

Ramulis pilosulis, petiolis 2-5 cm longis pilosulis, laminis 4-10 cm longis ovatis infra pilosulis, nodis 6-floriferis, pedicellis 3-4 mm longis pilosulis, calycibus 4-4.5 mm longis pilosis, lobis 2 mm longis ovatis, corollis 13 mm longis albis pilosis, tubo 7 mm longo, labia infera 7 mm longa. Typus: Tonga, Ata I., Nov. 11, 1958, E. Soakai 226 (K).

P. triangularis sp. nov.

Ramulis pilosis, petiolis 12-20 mm longis pilosis, laminis 2.5-7 cm longis ovatis infra pilosulis, nodis 6-10-floriferis calycibus 3.8-4 mm longis pilosulis, tubo corollae 9-10 mm longo pilosulo, labia infera 7 mm longa. Typus: Molokai I., J. F. Rock 7,023.

P. triquetra sp. nov.

Ramulis puberulis, petiolis 10-37 mm longis pilosulis, laminis 6-8 cm longis ellipticis infra pilosulis, nodis 8-10-floriferis, calycibus 3.5-4 mm longis puberulis, tubo corollae 7.5-8 mm longo puberulo, loba infera 6 mm longa. Typus: Maui I., H. Mann & W. T. Brigham 404.

P. velutina (Sherff) comb. nov.

P. macrophylla (Gaud.) Benth., var. *velutina* Sherff, Bot. Gaz. 96: 137, 1934.

P. waianaeensis sp. nov.

Ramulis pilosis, petiolis 3.3-6 cm longis pilosis, laminis 7-10.5 cm longis ovatis infra pilosulis, nodis 6-8-floriferis, calycibus 5-6 mm longis pilosulis, tubo corollae 10 mm longo piloso, labia infera 8-9 mm longa. Typus: Oahu I., R. L. Wilbur 609.

P. Warshaueri sp. nov.

Ramulis villosis, petiolis 0.7-10 cm longis villosis, laminis 4.7-20 cm longis lancei-ovatis infra villosis, nodis 8-10-floriferis, calycibus 18-22 mm longis villosis, lobis 10-12 mm longis lanceolatis serrulatis. Typus: Hawaii I., F. R. Warshauer 1,405.

DIAGNOSES OF NEW HAWAIIAN SPECIES OF TOUCHARDIA (URTICACEAE)

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Harold St. John

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The holotypes are all in the Bishop Museum, Honolulu.

Toucharida Christensenii sp. nov.

Frutex masculus est, ramulis hirsutulis stipulis 3-3.5 cm longis puberulis, petiolis 9-14 cm longis puberulis, laminis 16.4-23 cm longis lanceo-ovatis, cymulis 2-5 cm longis, capitulis 13-22 mm diametro, calycibus 3 mm longis lobis 2.3 mm longis ellipticis, filamentis 2.5 mm longis, antheris 0.7 mm longis. Typus: Kauai I., Kamooloa Stream, C. Christensen 83.

T. glabra sp. nov.

Frutex masculus est, ramulis glabris, petiolis 3-10.5 cm longis glabris, laminis 23 cm longis late ovatis, cymis 5 cm longis, capitulis 13 mm diametro, calycibus 2 mm longis. Typus: Maui I., Puu Kukui, G. R. Ewart III & O. H. Swezey 56.

T. haupuensis sp. nov.

Frutex masculus est, ramis puberulis, petiolis 11-12.5 cm longis hirsutulis, laminis 17.3-20.3 cm longis ovatis, cymis 4-6 cm longis, capitulis 10-15 mm diametro, calycibus 2.3 mm longis lobis 2 mm longis ellipticis, filamentis 4 mm longis, antheris 1 mm longis. Typus: Kauai I., Hii Mts., C. N. Forbes 657.K.

T. iaoensis sp. nov.

Frutex masculus est, ramis hirsutulis, petiolis 8.4 cm longis, laminis 35.3-39 cm longis lanceolatis, cymis 6.8-12.7 cm longis, capitibus 15-17 mm diametro, calycibus 3.5 mm longis lobis 2 mm longis ovatis, filamentis 3 mm longis, antheris 0.6 mm longis. Typus: Maui I., Iao, R. Hobdy 1,831.

T. konaensis sp. nov.

Frutex masculus est, caulibus hirsutulis, stipulis 7.4 cm longis lineari-lanceolatis puberulis, petiolis 6-12.5 cm longis puberulis, laminis 19-29 cm longis ellipticis acuminatis, cymis 7-11 cm longis, calycibus 2.5 mm longis lobis 2.5 mm longis lanceolatis, filamentis 2.5 mm longis, antheris 0.6-0.7 mm longis. Typus: Hawaii I., Kaumalumu, D. Herbst 1,646.

T. lanaiensis sp. nov.

Frutex femineus est, caule glabro, petiolis 19 cm longis in apice pilosis, laminis 22.5 cm longis late ovatis acuminatis cordatis, cymis 1.5-2.5 cm longis glabris, capitulis 5-7 mm diametro, calycibus 1.6 mm longis lobis 1 mm longis anguste lanceolatis. Typus: Lanai I., R. Hobdy 751.

T. molokaiensis sp. nov.

Frutex masculus est, ramulis adpresse hirsutis, stipulis 7.5 cm longis lineari-lanceolatis, in basi adpresse hirsutis, petiolis 4.5-7 cm longis hirsutis, laminis 24-29 cm longis ovatis acutis, cymes 3-3.5 cm longis, capitibus 10-11 mm diametro, calycibus 2.5 mm longis lobis 1.5 mm longis ovatis subacutis, filamentis 2.5 mm longis, antheris 0.6 mm longis. Typus: Molokai I., Waikolu Stream, H. St. John 23,455.

T. nana sp. nov.

Frutex masculus est, ramulis hirsutis, petiolis 12-16 cm longis hirsutis, laminis 19.5-22 cm longis ovatis acuminatis, cymis 3.8 cm longis, capitibus 10-18 mm diametro, calycibus 2.7 mm longis lobis 2 mm longis oblancei-trullatis, filamentis 2.5 mm longis, antheris 1 mm longis. Typus: Maui I., Keopuka, E. Y. Hosaka 2,673.

T. napaliensis sp. nov.

Frutex masculus est, ramulis adpresse hirsutis, stipulis 7.5 cm longis lineari-lanceolatis glabris, petiolis 7-8.5 cm longis ad apicem hirsutis, laminis 27-29 cm longis lanceolatis, cymis 3.5 cm longis, capitibus 1.8-2 mm diametro, calycibus 2.5 mm longis lobis 2 mm longis obovatis concavis, filamentis 1.5 mm longis, antheris 0.5 mm longis. Typus: Kauai I., Hanakapiai, C. Christensen 196.

T. occidentalis sp. nov.

Frutex masculus est, caule hirsuto, stipulis 4-5 cm longis, petiolis 7-10.5 cm longis in apice hirsutis, laminis 18-23 cm longis ovatis acuminatis, cymis 5-7 cm longis, capitibus 10-15 mm diametro, calycibus 1.9 mm longis ellipticis acutis, filamentis 2 mm longis, antheris 0.6 mm longis. Typus: Maui I., Honokohau, H. St. John 21,357.

T. wailauensis sp. nov.

Frutex masculus est, ramulis hirsutis, stipulis 6 cm longis lineari-lanceolatis in basi adpresse puberulis, petiolis 12-14 cm longis in apice hirsutis, laminis 23-28 cm longis ovatis acutis, cymis 3 cm longis, capitibus 8-10 mm diametro, calycibus 3 mm longis lobis 2 mm longis oblongi-lanceolatis, filamentis 2 mm longis, antheris 0.8-0.9 mm longis. Typus: Molokai I., Wailau, H. St. John 23,349.

T. wainihaensis sp. nov.

Frutex masculus est, ramulis puberulis, petiolis 8.5-13.5 cm longis puberulis, laminis 18.2-26.5 cm longis elliptici-lanceolatis infra in nervis hirsutis, cymis 3.5 cm longis, capitibus 1.7-2 cm diametro, calycibus 2.5 mm longis lobis 2 mm longis ovatis, filamentis 2 mm longis, antheris 0.6-0.7 mm longis. Typus: Kauai I., Maunahina, E. Earle 47.